

### **Amendments to the Claims**

1. (*Currently Amended*) An array (20) of magnetoresistive memory elements (40) comprising:

~~means for applying a source to apply a current or a voltage for generating a programming magnetic field at a selected magnetoresistive memory element (40s),~~

~~a magnetic field sensor unit (50) for measuring an external magnetic field in the vicinity of the selected magnetoresistive memory element (40s), and~~

~~means (52) for tuning a compensation circuit to tune the current or voltage for compensating locally for the measured external magnetic field during a programming operation.~~

2. (*Currently Amended*) ~~An array according to claim 1;~~ An array of magnetoresistive memory elements comprising:

~~means for applying a current or a voltage for generating a programming magnetic field at a selected magnetoresistive memory element,~~

~~a magnetic field sensor unit for measuring an external magnetic field in the vicinity of the selected magnetoresistive memory element, and~~

~~means for tuning the current or voltage for compensating locally for the measured external magnetic field during a programming operation; and~~

wherein the magnetic field sensor unit (50) is an analog sensor unit.

3. (*Currently Amended*) ~~An array according to claim 1;~~ The array according to claim 2, wherein the magnetic field sensor unit comprises a plurality of magnetic field sensors (50).

4. (*Currently Amended*) ~~An array (20) according to claim 1;~~ The array according to claim 2, wherein the means for applying the current or voltage comprise at least one current line (44, 45) and means for flowing current ( $I_{bit}$ ,  $I_{word}$ ) through the at least one current line.

5. (*Currently Amended*) ~~An array (20) according to claim 1;~~ The array according to claim

2. wherein the magnetic field sensor unit  $\langle 50 \rangle$  is adapted to generate an output signal  $\langle 51 \rangle$  representative of the external magnetic field measured.

6. (*Currently Amended*) An array  $\langle 20 \rangle$  according to claim 4, wherein the means  $\langle 22 \rangle$  for tuning the current or voltage comprises a compensation circuit for imposing a compensation current ( $I_{comp\_b}$ ,  $I_{comp\_w}$ ) to flow through the at least one current line  $\langle 14, 15 \rangle$ .

7. (*Currently Amended*) An array  $\langle 20 \rangle$  according to claim 6, wherein the compensation circuit also imposes a compensation magnetic field at the magnetic field sensor unit  $\langle 50 \rangle$ .

8. (*Currently Amended*) An array  $\langle 20 \rangle$  according to claim 2, wherein the analog magnetic field sensor unit  $\langle 50 \rangle$  is an element of the same construction as the magnetoresistive memory elements  $\langle 10 \rangle$ .

9. (*Currently Amended*) An array  $\langle 20 \rangle$  according to claim 8, wherein the magnetic field sensor unit  $\langle 50 \rangle$  is more sensitive to magnetic fields than the magnetoresistive memory elements  $\langle 10 \rangle$ .

10. (*Currently Amended*) Method for compensating for the presence of an external magnetic field during programming of a magnetic memory element  $\langle 10 \rangle$ , the programming being performed by applying an current ( $I_{bit}$ ,  $I_{word}$ ) or a voltage for generating a programming magnetic field to the magnetic memory element  $\langle 10 \rangle$ , the method comprising:

measuring the external magnetic field in the vicinity of the magnetic memory element  $\langle 10 \rangle$ , and

locally compensating for the external magnetic field during the programming operation by tuning the current ( $I_{bit}$ ,  $I_{word}$ ) or voltage for generating the programming magnetic field.

11. (*Currently Amended*) Method according to claim 10, Method for compensating for

the presence of an external magnetic field during programming of a magnetic memory element, the programming being performed by applying an current ( $I_{bit}, I_{word}$ ) or a voltage for generating a programming magnetic field to the magnetic memory element, the method comprising:

measuring the external magnetic field in the vicinity of the magnetic memory element, and

locally compensating for the external magnetic field during the programming operation by tuning the current ( $I_{bit}, I_{word}$ ) or voltage for generating the programming magnetic field; and

wherein applying a current or a voltage comprises flowing a current ( $I_{bit}, I_{word}$ ) through at least one current line ~~(14, 15)~~.

12. (*Currently Amended*) Method according to claim 11, wherein tuning the current or voltage comprises flowing a current ( $I_{bit}+I_{comp\_b}, I_{word}+I_{comp\_w}$ ) through the at least one current line ~~(14, 15)~~, which current ( $I_{bit}+I_{comp\_b}, I_{word}+I_{comp\_w}$ ) is different from the current ( $I_{bit}, I_{word}$ ) which would flow through the at least one current line ~~(14, 15)~~ when no external magnetic field would be present in order to generate a same programming magnetic field.

13. (*New*) The array according to claim 1, wherein the magnetic field sensor unit is an analog sensor unit.

14. (*New*) The array according to claim 1, wherein the magnetic field sensor unit comprises a plurality of magnetic field sensors.

15. (*New*) The array according to claim 1, wherein the a source to apply a current or a voltage comprises at least one current line and sources for flowing current ( $I_{bit}, I_{word}$ ) through the at least one current line.

16. (*New*) The array according to claim 1, wherein the magnetic field sensor unit is adapted to generate an output signal representative of the external magnetic field measured.
17. (*New*) The array according to claim 15, wherein a compensation circuit to tune the current or voltage comprises a compensation circuit for imposing a compensation current ( $I_{comp\_b}$ ,  $I_{comp\_w}$ ) to flow through the at least one current line .
18. (*New*) The array according to claim 17, wherein the compensation circuit also imposes a compensation magnetic field at the magnetic field sensor unit.
19. (*New*) The array according to claim 1, wherein the analog magnetic field sensor unit is an element of the same construction as the magnetoresistive memory elements.
20. (*New*) The array according to claim 13, wherein the magnetic field sensor unit is more sensitive to magnetic fields than the magnetoresistive memory elements.